Biopharmaceutics Assignment.

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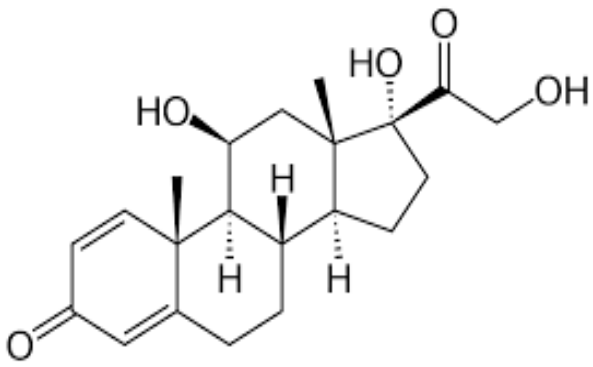
prednisolone (Rx)



-Brand Names: Pediapred, FloPred, Orapred, Orapred ODT, Millipred, Millipred DP, Prelone Syrup, Veripred 20

- Classes: Corticosteroids

1- Dosage Forms & Strengths

-oral solution: 5mg/5mL, 10mg/5mL, 15mg/5mL, 20mg/5mL, 25mg/5mL)

- tablet, dose pack 5mg (6 days [21 tabs]), 5mg (12 days [4 tablet, dose pack

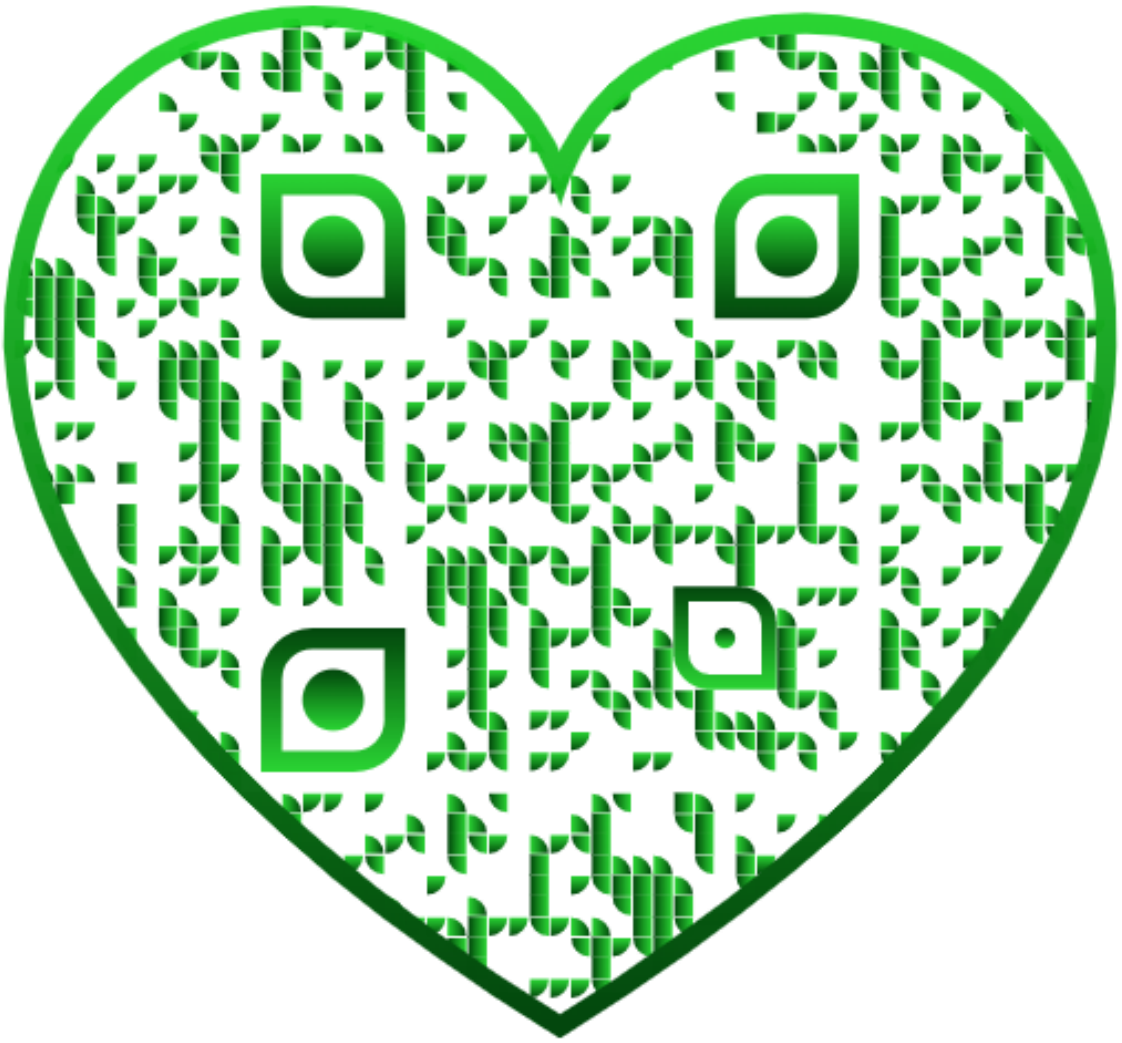
5mg (6 days [21 tabs]), 5mg (12 days [48 tabs])8 tabs])

2- main uses

Rheumatoid Arthritis
Multiple Sclerosis
Acute Exacerbation of COPD (Off-label)
Bells Palsy (Off-label)

3- Mechanism of Action:

Glucocorticosteroid; elicits mild mineralocorticoid activity and moderate anti-inflammatory effects; controls or prevents inflammation by controlling rate of protein synthesis, suppressing migration of polymorphonuclear leukocytes (PMNs) and fibroblasts, reversing capillary permeability, and stabilizing lysosomes at cellular level



4- Absorption

- prednisolone is a lipophilic weak acid that crosses the cell membrane by (passive transport).

Bioavailability: 77% (PO; neither food nor antacid alters bioavailability)

Onset (PO PUD): 24 hr (initial response)

Duration (18-36 hr)

Peak plasma time: 5 min (IV); 1 hr (PO)

Protein bound: 65-91% (lower in elderly)

Vd: 0.22-0.7 L/kg

Half-life: 3.6 hr (normal renal function); 3-5 hr (end-stage renal disease)

Dialyzable: No

Renal clearance: 0.1 L/hr/k9.5 mL/ming

Excretion: Urine (secration) (71%); feces (18%

5- Metabolism : Metabolized extensively by hepatic P450 enzyme CYP3A;